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EDITOR

WILLIAM ALPHONSO MURRILL

Assistant Director



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WITH 12 PLATES AND 39 FIGURES

1908

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Assistant Director



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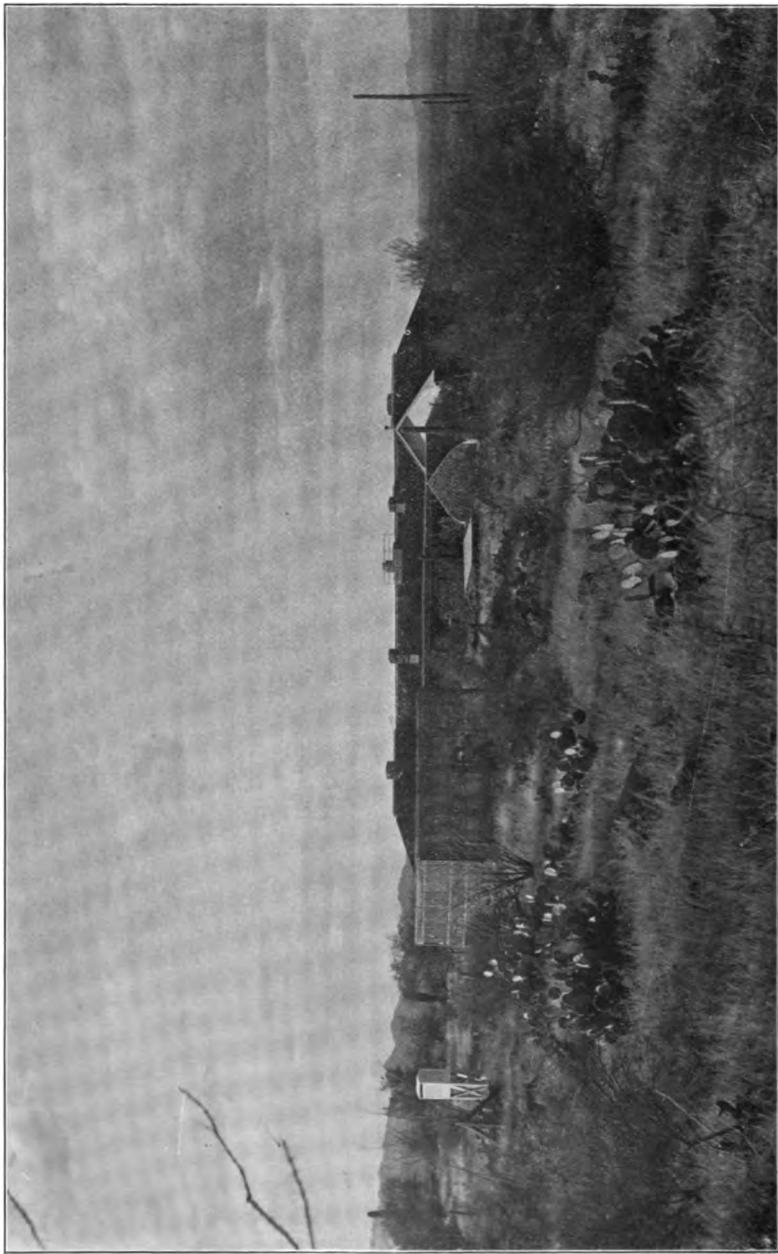
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Courtesy of the Carnegie Institution of Washington.

THE DESERT LABORATORY AT TUCSON, ARIZONA, PHOTOGRAPHED NOVEMBER 10, 1908, WITH SEVERAL SPECIMENS OF
CARNEGIA GIGANTEA.

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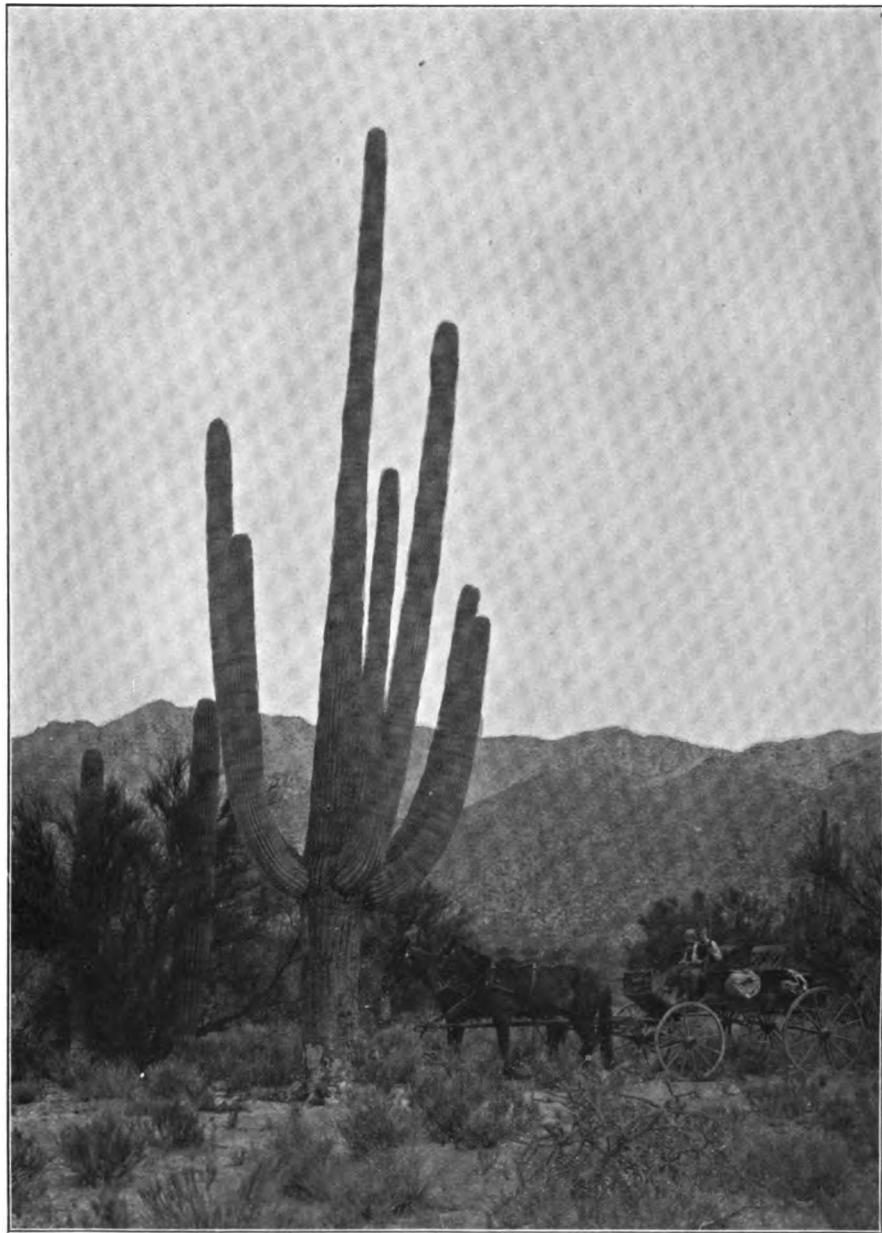
A NEW GENUS OF CACTACEAE.

The gigantic cactus of Arizona and adjacent regions, known in its home by the common name sahuaro, is one of the most remarkable of plants and the most striking element in the desert vegetation of the southwest. As pointed out by Dr. D. T. MacDougal, it was probably first observed by Europeans about 1540, when the expedition of Coronado passed through the region which it inhabits; Onate in 1604 passed through the valley of the Bill Williams Fork of the Colorado River in Arizona and noted the plant, and his account is probably the earliest printed record of it (see *Journ. N. Y. Bot. Gard.* 6: 129-130). While known to earlier explorers from the Atlantic seaboard, the first specimens of this interesting plant were collected on the expedition of Lieut. W. H. Emory, a military reconnaissance from Fort Leavenworth in Missouri to San Diego in California, during the autumn of 1846, and the plant is frequently referred to in his report. These specimens were sent to Dr. George Engelmann at St. Louis and after a study of them he gave this cactus the botanical name *Cereus giganteus*.

The plant grows on hillsides in southern Arizona, southeastern California and northern and central Sonora, sometimes reaching a height of sixty feet, branching at from twelve to twenty feet above the ground. Travelers through these regions are always impressed by its very unusual form, and many thousands of people have become familiar with it since three plants were brought to the New York Botanical Garden by Dr. MacDougal in the spring of 1902, where they have since been

successfully maintained, flowering every year in late spring and early summer (Journ. N. Y. Bot. Gard. 3: 96-98). During our study of the North American Cactaceae, which has now extended over several years, the species included by previous students in the genus *Cereus* have been critically examined; most of them have been seen in the living state, and living specimens are now in the conservatories of the New York Botanical Garden, and in those of the United States Department of Agriculture at Washington. As these specimens have come into flower from time to time it has become increasingly evident that the conception of the genus *Cereus* by previous authors has been altogether too broad. This was inferred at the outset of the investigation from a study of the published descriptions and illustrations, and from the fact that the plant-body of species of *Cereus* ranges all the way from slender climbing vines and low tufted plants, up to the magnificent and stately proportions of the sahuaro and of the other gigantic species which inhabit southern Mexico. The type species of *Cereus* is *Cereus peruvianus* Miller, a night-blooming species native of South America, fine large specimens of which may also be seen in the conservatories of the Garden. Some genera have already been suggested as distinct from *Cereus* by one author or another.

The most noteworthy recent study of these plants has been by Mr. Alwin Berger, gardener at the late Sir Thomas Hanbury's famous home at La Mortola, Italy, entitled "A Systematic Revision of the Genus *Cereus* Miller" (Report Mo. Bot. Gard. 16: 57-86. 1905), which is a great improvement over the preceding discussion of these plants by the late Professor Karl Schumann (Gesamtbeschreibung der Kakteen, ed. 2, 1903), inasmuch as Mr. Berger first definitely groups most of the species into subgenera, more or less well-defined by floral and fruit characters; whereas Professor Schumann was obliged to group them only in series, many of these being very unnatural, and based almost wholly on the plant-body instead of on the inflorescence. Mr. Berger's contribution is a noteworthy advance, and we find ourselves largely in accord with his groupings of the plants, although there are some results in which we are obliged to differ with him,



Courtesy of the Carnegie Institution of Washington.

SPECIMEN OF *CARNEGIEA GIGANTEA* OF MAXIMUM SIZE, NEAR AGUA CALIENTE,
ARIZONA, ON THE SLOPES OF THE CATALINA MOUNTAINS,
PHOTOGRAPHED MARCH 25, 1908.



Courtesy of the Carnegie Institution of Washington.
FLOWERS, BUDS AND FRUITS OF *CARNEGIEA GIGANTEA*. ON ONE FLOWER ARE TO BE SEEN TWO BEES WHICH ARE
INSTRUMENTAL IN POLLINATION.

reached mainly from a more complete knowledge of flowers and fruits. Dr. Engelmann in his Synopsis of the Cactaceae of the United States (Proc. Amer. Acad. 3: 260-346. 1856) had earlier indicated some subgenera and had recognized *Cereus giganteus* as belonging to one of these, which he called *Lepidocereus*, a name which it is neither necessary nor desirable to main-

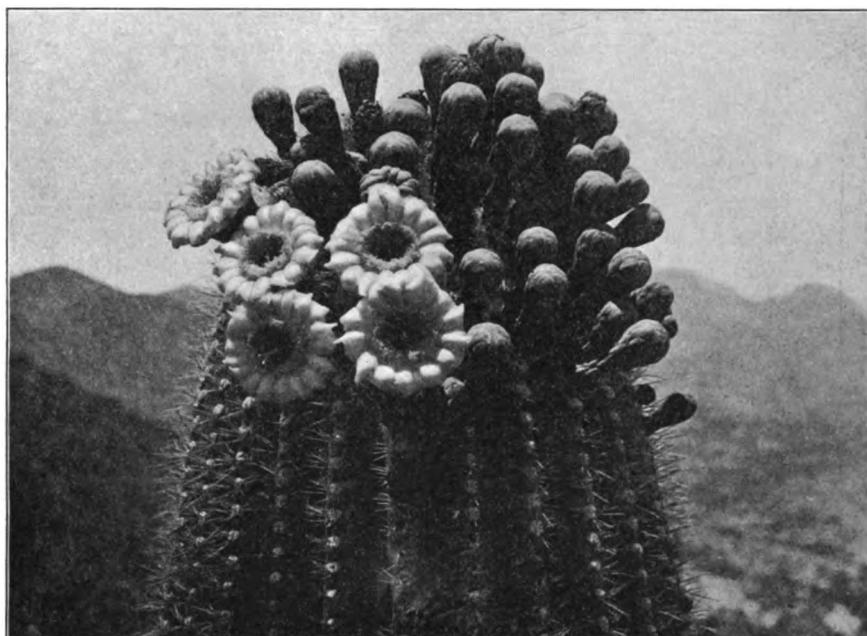


FIG. 32. Cluster of flowers at apex of stem of *Carnegiea gigantea* growing near Tucson, Arizona.

tain; he also included in this subgenus *C. Thurberi* Engelm., native of Sonora and Arizona, which we now know should be excluded, leaving only the sahuaro in the genus which we here propose under the name

CARNEGIEA.

A day-blooming cactus, with stout upright stems and few branches, or none, strongly ribbed, the areoles velvety, close together, and bearing 12-18 spines. Flowers borne at the areoles near the top of the stem and branches, funnelform, the tube

nearly cylindric, about half as long as the limb, bearing a few broadly triangular-ovate acute scales with tufts of wool in their axils; petals white, short, widely spreading and somewhat reflexed when fully expanded; ovary spineless, oblong, with similar scales somewhat closer together; stamens very numerous, about three-quarters as long as the petals; stigmas 12-18, narrowly linear, reaching a little above the stamens; fruit an oblong or somewhat obovoid berry with small distinct scales, its pulp red, the seeds very small, numerous, black and shining. The genus consists only of the species.

Carnegiea gigantea (Engelm.).

Cereus giganteus Engelm. Rept. Emory's Recon. 159. 1848.

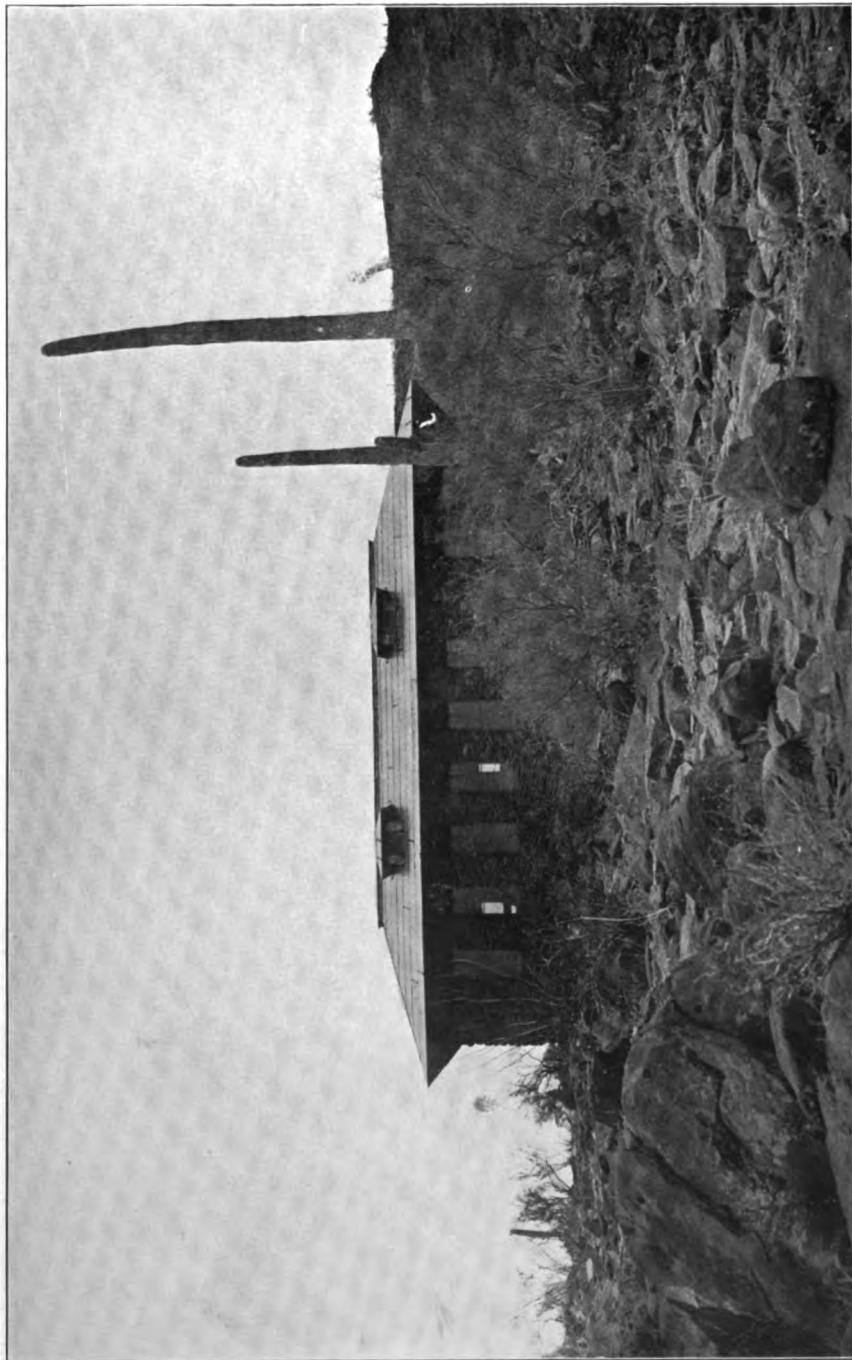
The genus is dedicated to Mr. Andrew Carnegie. The Desert Laboratory of the Carnegie Institution of Washington, at Tucson, Arizona, is surrounded by typical specimens of this unique plant.

N. L. BRITTON,
J. N. ROSE.

LETCHWORTH PARK AND THE FALLS OF THE
GENESEE.*

The Genesee River rises in the northern part of Pennsylvania, in the Allegheny plateau, and during its course of one hundred and twenty-three miles in the state of New York it has a fall of fifteen hundred and fifty-three feet, finally emptying into Lake Ontario at Rochester. This river is unique in two particulars: It is the only river in New York which flows entirely across the state; and it is the only river crossing the southern boundary which flows to the north. For a part of its course it forms the boundary line between the counties of Wyoming and Livingston, and it is to a short distance of this boundary portion, some three miles in length, that I wish to call your attention. Here, in a strife which was begun in ages past, but which is still continued between the waters and the land, this river has cut for itself a deep bed, known as the Portage or Glen Iris gorge, and in this short three miles is comprised some of the most striking and magnificent scenery in the eastern United States, being second only to

* From a lecture delivered at the New York Botanical Garden, October 31, 1908.



THE DESERT LABORATORY AT TUCSON, ARIZONA, AS IT APPEARED SEVERAL YEARS AGO. TWO PLANTS OF *CARNEGIEA GIGANTEA* ARE CONSPICUOUS IN THE FOREGROUND.



SPECIMENS OF *CARNEGIEA GIGANTEA* COLLECTED NEAR TUCSON, ARIZONA, IN 1902,
IN BLOOM IN THE CONSERVATORIES OF THE NEW YORK BOTANICAL GARDEN.

that of Niagara, which, though more imposing and on a grander scale, must perhaps give way in some respects to its smaller rival.

To this place, about the middle of the last century, was attracted a gentleman destined to be one of the great men of New York — a man of deep charity and broad human interest — a descendant from sturdy Quaker stock. This man is the Hon. William Pryor Letchworth, for a long time a member of the state board of charities, and for many years its president. A gentleman of the old school, courteous and kindly, with an open hospitality which makes the guest feel at once at home, and with a broad human sympathy which embraces all mankind — to know this gentleman is indeed a privilege.

To this man the state, the nation too, owes a debt of gratitude, for to his generosity the people of the country are indebted for a gift of almost priceless value. As will be shown in detail below, Mr. Letchworth has given to the state of New York, for all time, the beautiful tract of land, containing over one thousand acres, now known as Letchworth Park, including within its confines all three of the falls of the upper Genesee.

It was in 1859, about two years after the Hon. Andrew H. Green, a kindred spirit, had begun improvements in our own Central Park, that Mr. Letchworth made his first purchase of land along the Genesee. From time to time since then he has made additions to this original acquisition, until now, as stated above, the tract comprises over one thousand acres, and upon its acquisition and improvement there have been expended by Mr. Letchworth over five hundred thousand dollars. At the time of its purchase it had been devastated by lumbermen, and the tract was littered with only such refuse as a lumberman, in his greed for gain, can make — old limbs and branches, rotting logs, chips and stumps. All vestiges of these have been removed and in their place have appeared stretches of new timber, carefully preserved, and paths and driveways affording access to the beauties of nature here so lavishly displayed.

From its very inception, Mr. Letchworth has designed his estate as a public park, and the public has at all times been welcome to it. The immediate surroundings of his home have

been restricted, but to all other parts visitors have had free access. His home is known as Glen Iris, a name early conferred upon it by Mr. Letchworth, suggested by the beautiful rainbows which form constantly on bright days in the mists which rise from the middle fall.

From a private park, private only in the sense that it belonged to a private citizen, it was but a step to the broader outlook of a public park, and eventually we find Mr. Letchworth seriously considering the step to which I have already alluded—its free gift to the state as a public park or reservation. A committee of influential men was appointed, and after consultation with them this step was taken. On December 14, 1906, this committee called on Governor Hughes, explaining their mission, and it is said that he responded as follows: "In the midst of so many calls from people who are asking for something *from* the state, it is a novel and delightful sensation to have some one offer to give something *to* the state. This is certainly a most generous benefaction." On January 10, 1907, a bill was introduced into the legislature providing for the acceptance of this gift. A week later the assembly passed this unanimously, but in the senate opposition developed. An amended bill was there proposed, but, on the insistence of Mr. Letchworth, the original bill was finally passed by that body on the twenty-third with but four opposing votes, and on the twenty-fourth it became a law by the addition of the governor's signature.

The bill provides that "the land therein conveyed shall be forever dedicated to the purpose of a public park or reservation, subject only to the life use and tenancy of said William Pryor Letchworth, who shall have the right to make changes and improvements thereon." The bill also provides that after the death of the donor, control and jurisdiction of the tract shall be in the hands of the American Scenic and Historic Preservation Society, of which Mr. J. Pierpont Morgan is honorary president, and Mr. Geo. F. Kunz, the noted gem expert, president, thus placing it in safe hands. Early in February the senate and assembly adopted a concurrent resolution conferring the name of Letchworth Park upon this tract in honor of its donor.

That this park might be made of even greater service to the public, by emphasizing its educational side, Mr. Letchworth wished to have a study made of the arboreal vegetation in the park and the trees properly labelled. Dr. N. L. Britton, the Director-in-Chief of the Garden, was consulted in this matter, with the result that I was selected to visit the park and consult with Mr. Letchworth in reference to this. My first visit was made in the fall of 1907, and a sample of the label used on the trees in the New York Botanical Garden was submitted. Mr. Letchworth approved of this, and during July of the present year I made a second visit for the purpose of superintending the affixing of a number of labels of this type.

With this brief account of the history of Letchworth Park, I wish now to describe to you, with the aid of a few illustrations, some of its beauties and points of interest. A reference to the accompanying map will help make clear the positions of the various places mentioned.

From New York City the region is reached most conveniently by the Erie railroad. Leaving the train at Portage, which is on the Livingston county side of the river, a short walk brings us to the long viaduct, upon which the railroad crosses the Genesee. From the middle of this structure, which is two hundred and thirty-four feet above the level of the river, a magnificent view of the Genesee gorge may be had. Before us to the north, as far as the eye can see, lies a beautiful panorama of undulating hills and forest stretches, with the gorge and river winding like a narrow ribbon to the north. About five hundred feet from the viaduct the Genesee takes its first plunge, a cloud of spray and rising mists marking the position of the chasm into which the river leaps. This is known as the upper fall. Away to the northeast, about twenty-one hundred feet beyond the upper fall, another cloud of mist and spray reveals the spot where the river takes its second plunge, this being known as the middle fall. It is but a few hundred feet from this, on the left bank of the stream, that the residence of Mr. Letchworth is located. Between this and the third and last fall, out of view beyond the distant bend, lies the picturesque gorge of the Genesee.

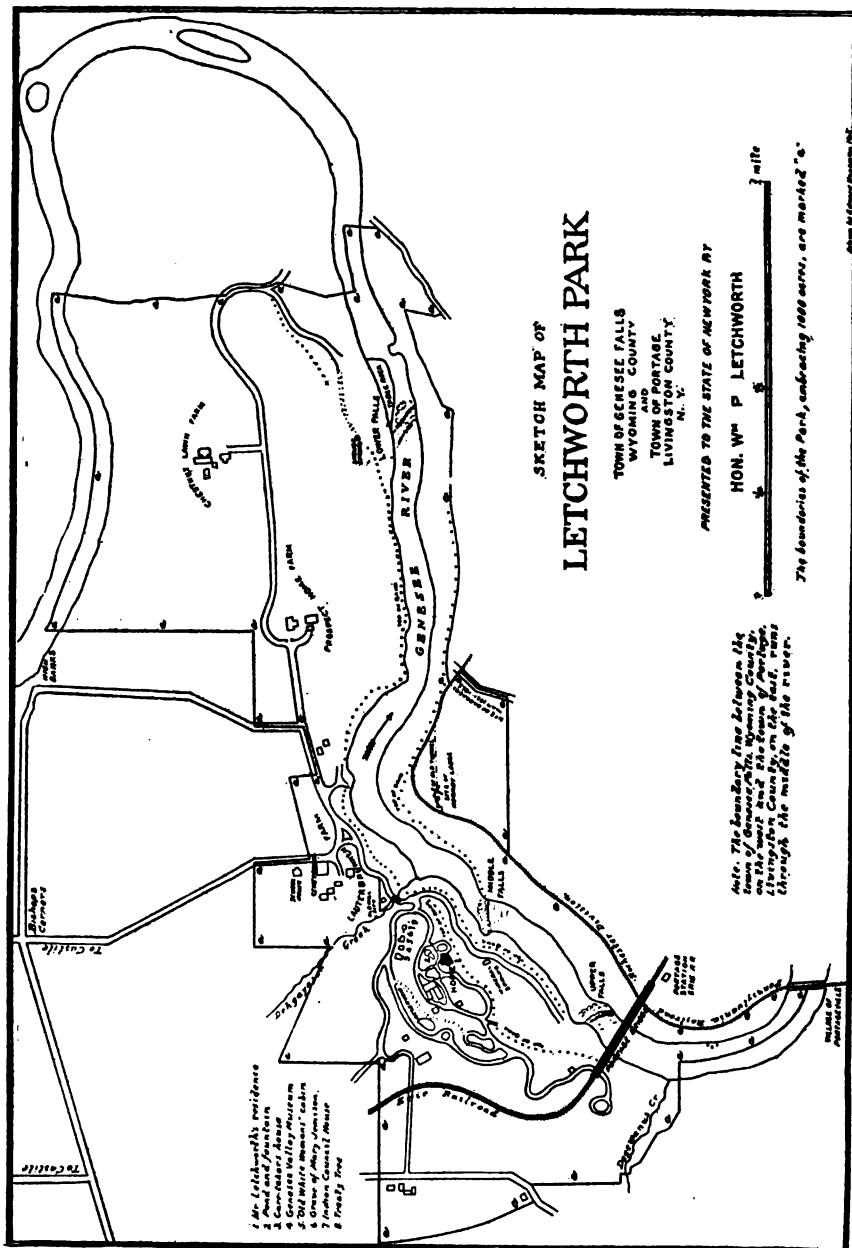


FIG. 33. Map of Letchworth Park. (From Rept. Amer. Scen. and Hist. Preserv. Soc.)

At the further end of the bridge will be found a series of steps and galleries which will conduct us to the vicinity of the upper fall. About half way down these we come to the falls of the De-ge-wa-nus, a small stream which empties into the Genesee at this point, and a little later to the picnic grounds. Here tables and benches have been provided for visitors, and hitching posts for horses, for many people drive from the surrounding country to see these falls. At this point glimpses may be had of the upper fall, but if one really wants to enjoy its grandeur,

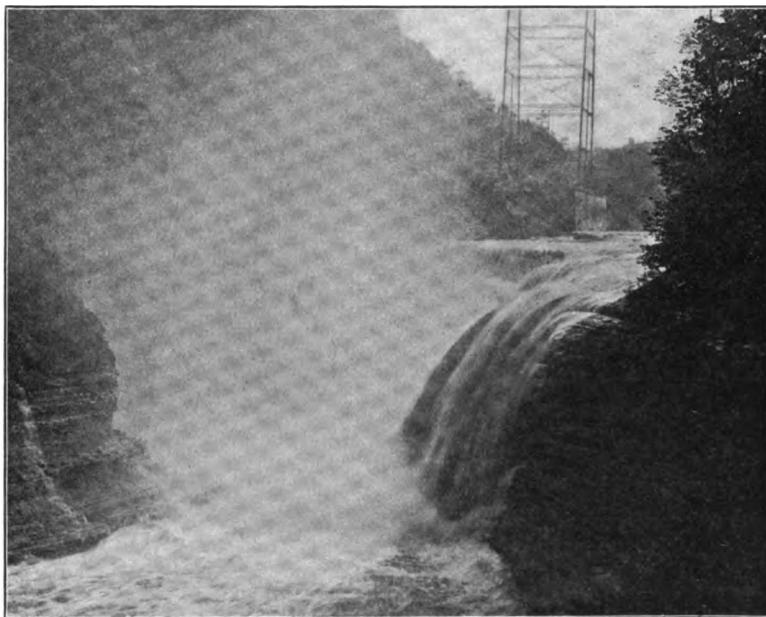


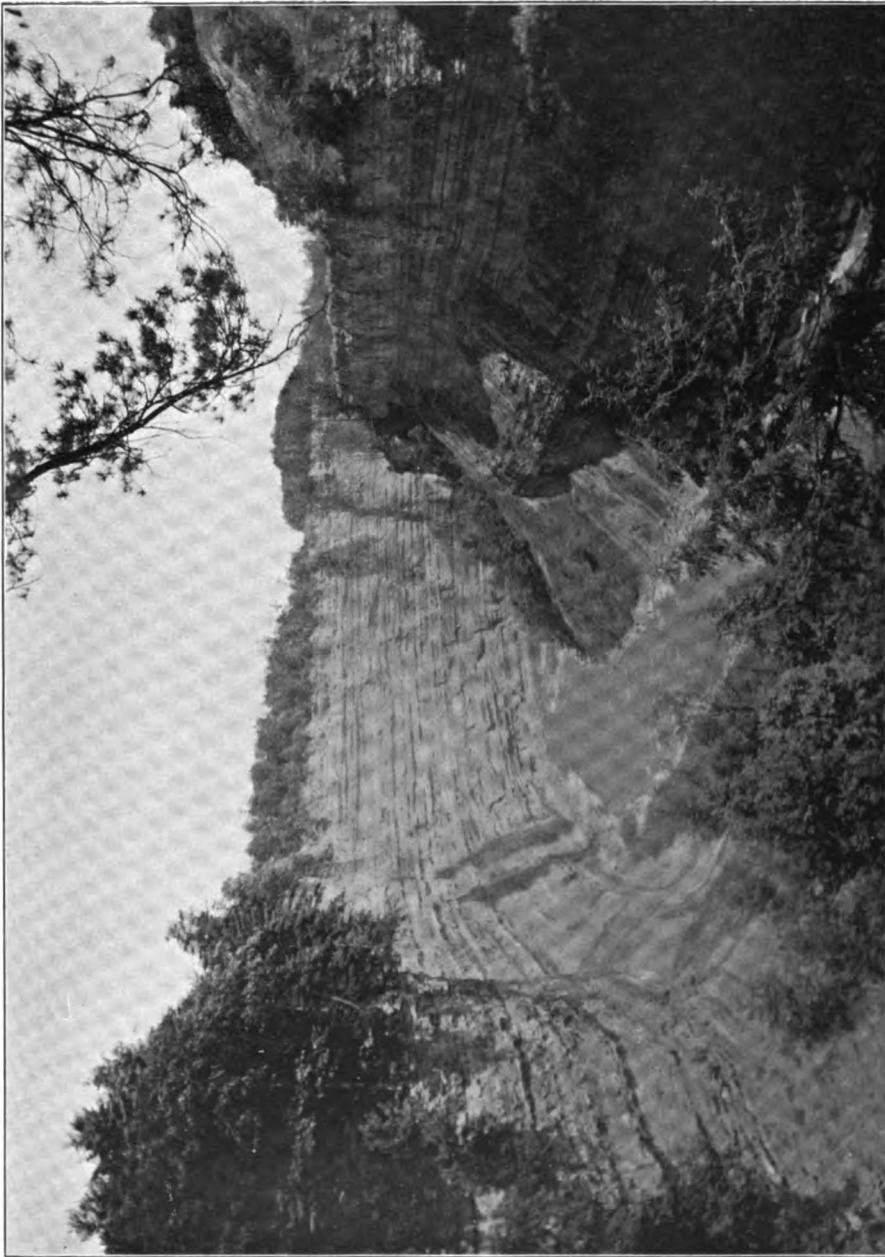
FIG. 34. Upper fall, seventy-one feet in height, veiled in its own mist.

let him pick his way carefully along the slippery and stony bank of the west side of the stream until he comes to a vantage point from which he may view the fall as seen in the above illustration. Along the west bank the road continues, and soon we hear the roar and see the mists of the middle fall, the greatest of the three. From an observatory on a small rocky plateau at the very brink of the fall, an impressive view may be had of the great volume of water as it drops over the precipice to the river about one hundred and seven feet below.

Leaving the little observatory, the path follows along the brink of the gorge to a point on the cliff not far from the residence of Mr. Letchworth, where we get a magnificent view of the gorge, looking northeast. The accompanying illustration gives some idea of this, but only a visit to the spot will make one realize its beauties. On either side are perpendicular walls of rock, beautifully variegated by alternating strata of shale and sandstone, rising to a height of three hundred and fifty feet, twenty feet higher than the palisades opposite New York City, crowned on the left bank with a mass of vegetation to an additional height of one hundred and fifty feet, making the total on that side nearly five hundred feet.

This gorge of the Genesee is often known as the Portage gorge, and these rocks, laid down nearly fifty million years ago, belong to the Portage epoch of the upper Devonian age. Most of what is now New York state then lay under a vast sea. The rivers of what land there was at that time washed their sediment down into this apparently shallow sea where it settled and formed not only the Portage rocks but also others of central and western New York. As time passed on, other and more modern strata were laid down on this Portage formation, burying it out of sight. Ages passed, and finally came a great upheaval of the continent, when the bottom of this sea was raised up and dry land was formed. As the center of this upheaval was to the north, the strata, which were formerly horizontal, assumed a gentle dip to the south. Then the elements attacked the land; the winds and the rains and the floods came and washed and eroded, until finally in millions of years the Portage rocks were again brought to view.

About the time of the glacial age a great depression occurred in the north, reversing the inclination of the land, making the rivers which formerly flowed to the south now take a northerly direction. But the glaciers, stopping up the valleys with their debris, formed large lakes, and one of these was located in the large basin-like area, a part of the old Genesee valley, to the south of the present Portage gorge. As the depression continued in the north, this lake began to overflow, naturally at the



By permission from a photograph made by Mr Edward Haggaman Hall.

GORGE OF THE GENESEE, AS SEEN FROM NEAR THE RESIDENCE OF MR. LETCHWORTH.

lowest point in its brim, which happened to be not at the region of the old valley, but at the site of the present gorge. This stream, probably at first but a small brook, following the line of least resistance, gradually wore for itself a tortuous channel, sinking it deeper and deeper as the years went by, until it formed and is still forming for itself the deep channel known as

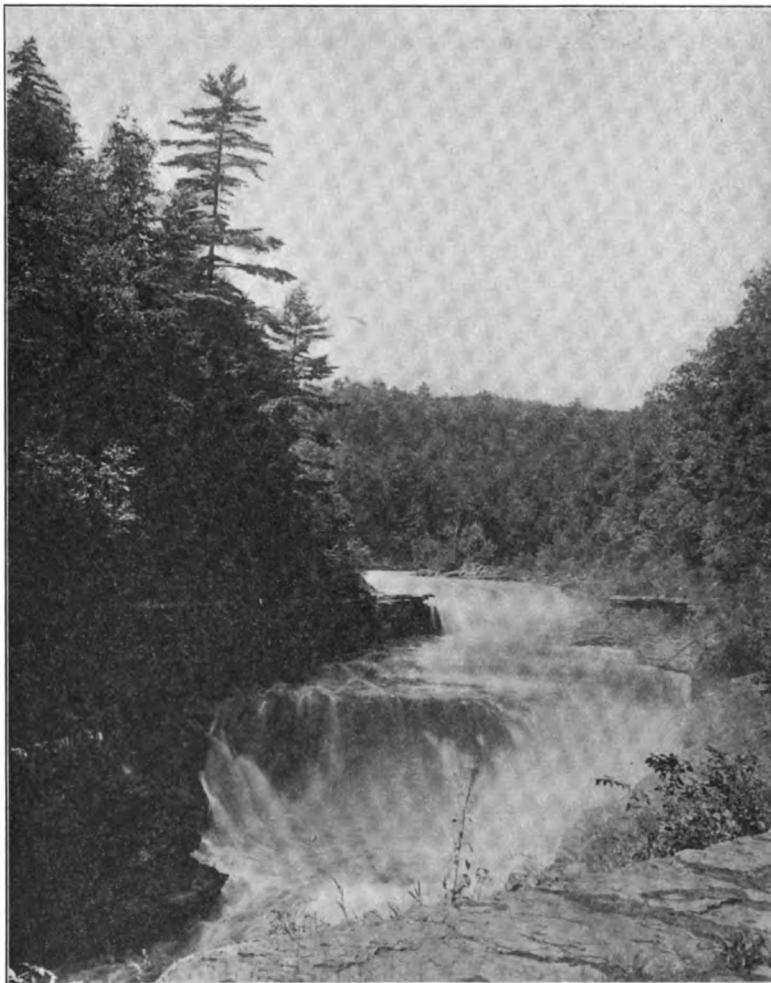


FIG. 35. Lower fall, looking up-stream from table rock, the separation into two cascades clearly shown.

the Portage gorge. At first there was probably but one fall, but, owing to the variation in the hardness of the strata, which wore away unevenly, the original fall began to split into two and then into three falls, and these are still changing their relative positions.

Leaving this interesting spot and continuing along the path which skirts the gorge, a walk of about one and a half miles brings us to the plateau above the lower fall. From this place a series of stairs and galleries descend to the bottom of the gorge, and bring us into a magnificent strip of old timber, consisting of large tulip-trees, hemlocks, maples, and other splendid trees. It is a delight to see this old timber, preserved from the devastating hand of the lumberman by obstacles thrown in the way by nature. On the one side is a tall cliff, now clothed with verdure, and on the other the raging waters of the river, two obstacles which the lumberman could not surmount, and so we have left to us a remnant and a reminder of what this whole region once was.

Passing through this strip of forest by a delightful woodland path, we suddenly emerge upon the brink of the chasm through which rush the waters of the lower fall. The view here presented of this fall is that which one sees from the upper end of Table Rock, displaying both cascades. Here is demonstrated the manner in which the three falls have separated, for you see the first step of the process, the breaking up of the lower fall into two cascades. In time these will separate more and more, and there will be four falls instead of three.

Two of the most interesting features of the lower fall region are Table Rock and Cathedral Rock, shown in the accompanying illustration. Many years ago Professor Hall said of Table Rock : " The table above, which was formerly the bed of the river, will in a few years become covered with soil and vegetation ; strong grass and willows will have taken root in the fissures, and these collecting about them a little earth, giving a soil for the support of other plants, the evidence of its original condition will be lost. A century hence, some incredulous observer may stand on the edge of Table Rock, then covered with shrubs and trees, and deny that the insignificant stream flowing in its bed

can have excavated this deep chasm. An observer of similar disposition may now stand on the margin of the great gorge of the Genesee at Portage and say that it is impossible for this river to have worn it to the depth of 350 feet and a breadth of 600 feet. But the Genesee was once a more powerful stream, and it has flowed in its present direction longer than we are usually accustomed to consider as the age of the world." How true this prophecy was is evidenced by the trees and shrubs, and grass and other herbs now securing a firm foothold on this plateau.



FIG. 36. Table rock, with the flume to the left, and cathedral rock, as seen from the left bank.

Leaving this beautiful region of the lower fall, we will return to the upper portions of the park, traversing this time, however, not the path along the brink of the gorge, but the road inland which passes through the farm lands, comprising several hundred acres of the estate. To the right of this road which parallels the Genesee, we see the Chestnut Lawn Farm, equipped as a modern dairy, while opposite to this, on the other side of the

road, is the Prospect Home Farm, and beyond these the Lauterbrunnen Farm.

It is but a short step from this last farm to the residence of Mr. Letchworth. Here we find a commodious house with an ample porch on two sides, with large columns running up for two stories, so that many of the sleeping apartments look out upon it. To one side, between the residence and the front gate, is a little pond with a fountain playing continuously, fed by a perennial spring in the hillside near by. This fountain seems to be a vista-point, for it may be seen here and there from various parts of the grounds. Large evergreen and deciduous trees surround the house, among them a fine American elm and some magnificent specimens of the Norway spruce, perfect in shape and branched entirely to the ground, their long branches trailing in the grass. From the group of trees surrounding the house spread broad lawns, the planting so arranged as to form charming vistas, which terminate in many cases in the woodland beyond. The open stretches of lawn contain no flower beds, and the shrubbery does not obtrude and detract from the harmony around. Along the brink of the gorge trees have been planted, with openings here and there, so that beautiful vistas upon the falls and gorge meet the eye as one strolls along the paths. All trees and shrubs not native to the vicinity are confined to the regions in the immediate neighborhood of the residence, so that the woodlands beyond contain native plants only. It is a delight to walk through these woods and see the tulip-trees, white pines, Norway pines, cucumber-trees, elms, oaks, chestnuts, beeches, hornbeams, butternuts, and many other trees, natives of this region, in such great abundance.

One of the roads through these woodlands finally leads us to the Council House Grounds, one of the most interesting features of the park. Here will be found an old Indian council house, from which the reservation takes its name. This building, constructed of hewn logs, is about forty feet long and seventeen feet wide. Its exact age is uncertain, but it is known to antedate the revolution. It is a work of the Seneca Indians, and was formerly located at Caneadea, or Ga-o-ya-de-o, the uppermost of their

villages on the Genesee, about eighteen miles from its present location. It was falling to decay when Mr. Letchworth decided to remove it to its present site in 1871. In taking it down each part was carefully numbered so that it might be put together exactly as it was originally.

The Senecas were one of the five nations which composed the league of the Iroquois, the other four being: the Mohawks, Oneidas, Onundagas, and Cayugas. Of these the Senecas were the most numerous, enterprising, and chivalrous, and were set to guard the western door of the confederacy. They were organized, devoted to agriculture, and were great orators. As Caneadea was in the southwestern border of the Seneca country, it was a convenient rendezvous of war-like parties passing to their fights in Ohio and Pennsylvania.

On October 1, 1872, the last council of the Senecas was held in this house, nineteen warriors, a mere remnant, being present from the neighboring reservation. At this council the Indians urged Mr. Letchworth to consent to adoption into the Seneca nation, which was their way of showing appreciation of his devotion to the interests of the Indians, for whom he had done so much. Mr. Letchworth, however, declined. That evening he was surprised by a visit from them, when they repeated their request, to which he acceded, the ceremony being performed on his front porch. As was their custom on such occasions, they bestowed on him a name — *Hai-wa-ye-is-tah* — meaning, “the man who always does the right thing.”

Not far from the council house is the “White Woman’s Cabin,” and near by the grave of Mary Jemison. The house was built by Mary Jemison for one of her daughters on the Gardeau reservation. The monument in front of this house was erected by Mr. Letchworth to her memory. Upon this are two inscriptions which tell the story of her life among the Senecas.

At the further end of the Council House Grounds is a section of the big treaty oak which formerly stood on the banks of the Genesee below Mt. Morris, opposite Geneseo. This tree stood near where the treaty was made transferring practically all of the land west of the Genesee to the whites. It took place in 1797,

in the presence of three thousand Indians, and consumed twenty-one days. Four million acres were disposed of for \$100,000. This amount was placed in trust in the hands of the government, and the interest is still paid on it as an annuity to the Indians.

The Genesee Valley Museum contains many objects of interest relating to this section, among which are numerous Indian relics; also the head of a large mastodon, found about seven miles from Glen Iris in 1879, and purchased by Mr. Letchworth.

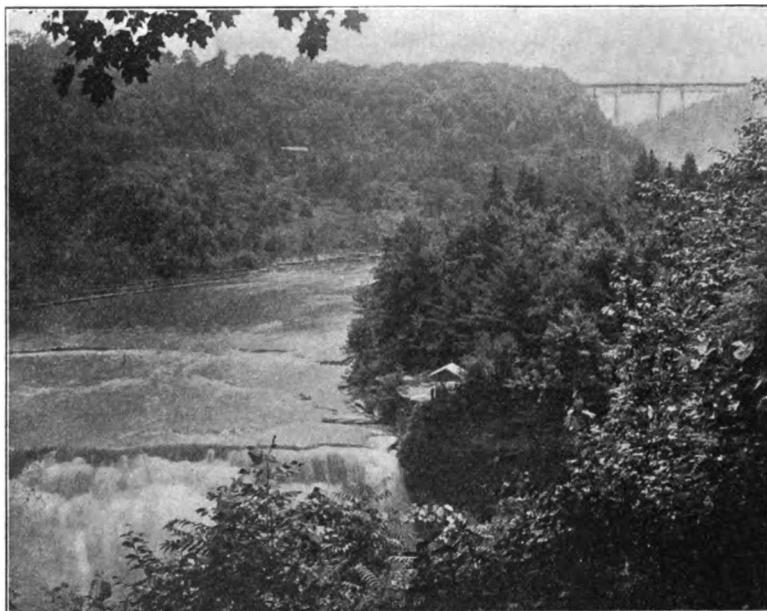


FIG. 37. Middle fall and the view up-stream, as seen from the lawn in front of the residence of Mr. Letchworth.

Before leaving Letchworth Park, let us descend the charming woodland path which connects this reservation with the home grounds and take a farewell look at the middle fall, which is shown in the last illustration. Here we are standing on the edge of the lawn, but a few feet from the south porch, looking up the gorge of the Genesee. Below, but a few hundred feet away, is the middle fall, sending up its clouds of mist and spray, which, on windy days, is blown upon the house near by, and in which, when

the sun is shining, rainbows come and go. To the right is the little observatory, just on the brink of the fall, from which we have looked out upon the waters as they plunged below. Further on we see the hazy distance of the other shore, and still beyond the mist rising from the upper fall to the railway viaduct above. This is the view which Mr. Letchworth has looked upon for many years and of which he is very fond.

GEORGE V. NASH,
Head Gardener.

NOTES, NEWS AND COMMENT.

Dr. N. L. Britton spent November 18 and 19 in Washington and Baltimore examining collections of cacti, and in attending a meeting of the Committee on Policy of the American Association for the Advancement of Science.

Dr. W. A. Murrill visited Harvard University November 7 to examine types of certain Boletaceae in the Farlow collection.

The autumn course of lectures to the 4 B and 5 B pupils of the public schools of Bronx closed November 10. No postponements on account of rain were necessary during the entire course, and on only one occasion was the attendance materially reduced by threatening weather.

An interesting and unique celebration will be held on the estate of Mr. George W. Vanderbilt at Biltmore, North Carolina, during the Thanksgiving holidays, commemorating the twentieth anniversary of the beginning of practical forestry at Biltmore and the tenth anniversary of the Biltmore Forest School.

The regular autumn course of public lectures delivered in the large hall of the museum building on Saturday afternoons closed November 21 with Dr. H. H. Rusby's lecture on "The Rubber Plants of Mexico." These lectures have been well attended.

The first botanical convention of the present collegiate year was held in the library on the afternoon of Wednesday, November 4. Mrs. N. L. Britton gave an account of her recent collections in Jamaica; Mr. E. W. Humphreys described an inter-

esting analogy existing between fossil plants and those now living; Mr. F. J. Seaver showed specimens of some fungi collected by him in North Dakota; and Mr. G. V. Nash exhibited a living specimen of *Stangeria*, a peculiar cycad obtained in Europe in 1902.

An interesting plant of the genus *Stangeria*, a native of southern Africa, may be seen among the cycads on the east side of house No. 1 of the public conservatories. Unlike all the other genera of the sago-palms, this one has pinnately veined leaflets, giving it much the appearance of some ferns. It was from this resemblance that Kunze, many years ago, named a leaf of this plant *Lomaria eriopus*. Living plants were brought into cultivation, which, on producing cones, disclosed the real nature of this plant. The name *Stangeria paradoxa* was then given to it, but the specific name must now give way to that used when it was described as a *Lomaria*. A young cone may be seen on the plant.

The total precipitation recorded at the Garden for October was 1.46 inches. Maximum temperatures were recorded of 75° on the 4th; 76.3° on the 11th; 88° on the 17th; 74.5° on the 19th, and 67° on the 26th; also minimum temperatures of 36° on the 3d; 39.5° on the 6th; 31° on the 13th; 37° on the 22d, and 34° on the 31st. Mean temperature for the month, 59.5°. First frosts occurred about the middle of the month.

ACCESSIONS.

LIBRARY ACCESSIONS FROM OCTOBER 1 TO OCTOBER 31, 1908.

BERGER, ALWIN. *Mesembrianthemen und Portulacaceen*. Stuttgart, 1908. (Given by Dr. N. L. Britton.)

BOULANGER, EMILE. *Notes sur la truffe*. Lons-le-Saunier, 1906. (Deposited by the Trustees of Columbia University.)

ENGLER, HEINRICH GUSTAV ADOLF. *Die Vegetationsformationen tropischer und subtropischer Länder*. Leipzig, 1908.

HENSLOW, GEORGE. *The heredity of acquired characters in plants*. London, 1908.

JONGKINDT CONINCK, A. M. C. *Dictionnaire Latin-Grec-Français-Anglais-Allemand-Hollandais, des principaux termes employés en botanique et en horticulture*. Bussum, 1907.

KRAEMER, HENRY. *A text-book of botany and pharmacognosy.* Ed. 3. Philadelphia, 1907. (Given by the Torrey Botanical Club.)

LERENARD, ALFRED. *Essai sur la valeur antitoxique de l'aliment complet et incomplet.* Paris, 1907. (Deposited by the Trustees of Columbia University.)

SAGRA, RAMON DE I.A. *Histoire physique, politique et naturelle de l'ile de Cuba: botanique.* Paris, 1838-45. 2 vols. (By exchange with the Department of Agriculture, Jamaica.)

SENN, GUSTAV. *Die Gestalt- und Lageveränderung der Pflanzen-Chromatophoren.* Leipzig, 1908.

Zeitschrift für induktive Abstammungs- und Vererbungslehre. Band 1, Heft ½ Berlin, 1908.

MUSEUMS AND HERBARIUM.

113 specimens of mosses from Japan and Korea. (By exchange with Mr. J. Cardot.)

92 specimens "Uredineen," Fasc. 44 & 45. (Distributed by Professors H. & P. Sydow.)

3,000 herbarium specimens from Jamaica, W. I. (Collected by Dr. and Mrs. N. L. Britton.)

1 specimen of *Eruca sativa* from Pennsylvania. (Given by Messrs. J. M. Thoburn & Co.)

10 specimens of flowering plants from Galt, Ontario. (Given by Mr. W. Harriot.)

50 specimens "Muscii Frond. Archipelagi Indici et Polynesiaci." (Distributed by Professor Max Fleischer.)

7 specimens of hepaticas. (Given by Miss Annie Lorenz.)

54 specimens of mosses from the Himalaya Mountains. (By exchange with the Royal Gardens, Kew, England.)

32 specimens "Muscii Norvegici." (By exchange with Dr. N. Bryhn.)

5 specimens "Hepaticæ Canariensis." (By exchange with Dr. N. Bryhn.)

1 specimen of *Picea* from Keewatin. (Given by Mr. S. S. Cummins.)

7 specimens of flowering plants, co-types, from New Mexico. (Given by Professor E. O. Wooten.)

2 specimens of *Aragallus* from North Dakota. (Given by Professor H. F. Bergman.)

600 herbarium specimens from New York, Virginia, Tennessee and North Carolina. (Collected by Dr. P. A. Rydberg.)

4 specimens of *Phragmites aquetongensis*, tertiary (?) fossil plants. (Given by Dr. A. Hollick.)

8 specimens of fossil plants from the eastern United States. (Given by Dr. A. Hollick.)

190 specimens of cretaceous fossil plants from Long Island and Martha's Vineyard. (By exchange with the U. S. Geological Survey.)

PLANTS AND SEEDS.

2 cactus plants for conservatories. (By exchange with United States National Museum, through Dr. J. N. Rose.)

1 orchid for conservatories. (Given by Mr. J. C. Zeladon.)

3 plants of *Pandanus utilis* for conservatories. (Given by Mrs. John H. Hall.)

1 plant of *Livistona chinensis* for conservatories. (Given by Mr. W. H. Mehlich.)

Arts and Sci. (mem, exec. comm, dept. bot.); publisher H. S. Biol. Leaflet (periodical) Brooklyn, N. Y. 06-08.

Plant distribution and ecology, lichenology.

WORTHLEY, IRVING TUPPER. Cornell Forest Sch, 00-02; **N. Y. Bot. Garden**, 03.

Native and cultivated shrubs.

YAMANOUCHI, SHIGEO, Univ. of Chicago, Chicago, Ill. b. Tokyo, Japan, Sept. 7, 76. Tea. Coll, Tokyo, M.S, 98; Columbia and **N. Y. Bot. Garden**, 04-05; Chicago (including Woods Hole Marine Biol. Lab.), 05-07, Ph.D, 07. Asst. prof, Tokyo Tea. Coll, 04; *asst. bot, Chicago*, 07-. A. A. A. S.

Cytology.

YATSU, NAOHIDÉ, Columbia, N. Y. C. b. Tokyo, Japan, Sept. 8, 77. Imper. Univ, Tokyo, A.B, 00; Columbia, Ph.D, 05; **N. Y. Bot. Garden**, 03-05. Soc. Exp. Biol. and Med; Tokyo Zool. Soc.

Zoology, cytology, embryology.

YERKES, MRS. ROBERT M. (See Waterson, Ada).

YORK, HARLAN HARVEY, Univ. of Texas, Austin, Tex. De Pauw, B.S, 03; Ohio State, A.M, 05; stud. asst. chem, De Pauw, 01-02; tutor human anat. and physiol, De Pauw, 01-02; stud. asst. bot, De Pauw, 02-03; fel. bot, Ohio State, 03-04, asst. bot, 04-05; fel, Columbia and **N. Y. Bot. Garden**, 05-06; spec. asst. bot, Nat. Mus. (Wash.), 06; assoc. in bot. Biol. Lab, Cold Spring Harbor, 06, 07; elected spec. asst. Dendrology, Amer. Mus. Nat. Hist, 06; *instr. bot, Texas*, 06-; Ohio Acad. Sci; Tex. Acad. Sci; A. A. A. S.

Taxonomy.

ZELENY, CHARLES, Indiana Univ, Bloomington, Ind. b. Hutchinson, Minn, Sept. 17, 78. Minnesota, B.S, 98, M.S, 01; **N. Y. Bot. Garden**, 01-02; Chicago, Ph.D, 04. Instr. zool, *Indiana*, 04-07, *assoc. prof*, 07-. Fel, A. A. A. S; Soc. Zool.

Zoology.

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Bulletin of the New York Botanical Garden, containing the annual reports of the Director-in-Chief and other official documents, and technical articles embodying results of investigations carried out in the Garden. Free to all members of the Garden; to others, \$3.00 per volume. Vol. I, Nos. 1-5, 449 pp., 3 maps, and 12 plates, 1896-1900. Vol. II, Nos. 6-8, 518 pp., 30 plates, 1901-1903. Vol. III, Nos. 9-11, 463 pp., 37 plates, 1903-1905. Vol. IV, Nos. 12-14, 479 pp., 14 plates, 1905-1907. Vol. V, No. 15, 105 pp., 1906; No. 16, 88 pp., 17 plates, 1906; No. 17, 115 pp., 1907. Vol. VI, No. 19, 114 pp., 1908.

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Vol. 7, part 1, issued Oct. 4, 1906. Ustilaginaceae, Tilletiaceae.

Vol. 7, part 2, issued March 6, 1907. Coleosporiaceae, Uredinaceae, Aecidiaceae (pars).

Vol. 25, part 1, issued August 24, 1907. Geraniaceae, Oxalidaceae, Linaceae, Erythroxylaceae.

Vol. 9, parts 1 and 2, issued December 19, 1907, and March 12, 1908. Polyporaceae.

Vol. 22, part 3, issued June 12, 1908, contains descriptions of the family Grossulariaceae by F. V. Coville and N. L. Britton, the Platanaceae by H. A. Gleason, the Crossosomataceae by J. K. Small, the Connaraceae by N. L. Britton, the Calycaanthaceae by C. L. Pollard, and the Rosaceae (pars) by P. A. Rydberg.

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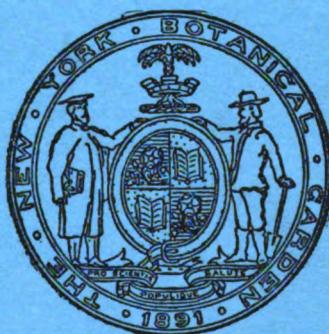
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The New York Botanical Garden

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Assistant Director



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